

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

## SECTION 3

### 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

States must transmit their water quality assessments (Section 305(b) reports) to the EPA Administrator by **April 1, 1998**, with draft reports to their EPA Regional Offices for review and comment no later than **February 1, 1998**. EPA requests that the States submit five (5) copies of their final reports to:

Barry Burgan  
National 305(b) Coordinator  
Assessment and Watershed Protection Division (4503F)  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460.

The EPA Regional Office may require additional copies.

The updated 305(b) process requires comprehensive assessments of the State's waters using a combination of monitoring designs. Beginning in 1998, States are encouraged to include in their 305(b) reports a map and plan for achieving the goal of comprehensive assessment coverage. States should achieve comprehensive assessment coverage as soon as possible and report in 1998 and subsequent 305(b) reports their status in achieving this goal.

EPA is updating the 305(b) process to allow States to take advantage of modern information technology to provide more current and comprehensive information on the status of the Nation's waters. **Three alternative reporting formats** are designed to reduce paperwork, allow more reporting flexibility and make information available to the public more quickly. Each State, Territory, Interstate Water Commission, the District of Columbia and participating Tribe may submit 305(b) information in one of three ways.

The preferred format is:

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

- C **An annual electronic report accompanied in even years by an abbreviated narrative report.** The abbreviated narrative report will contain:
- only the information required by law that has **changed** from the last report, and a simple reference to that report.

The second and less preferred approach is:

- C **In even years, an electronic report accompanied by an abbreviated narrative report.** The abbreviated narrative report will contain:
- only the information required by law that has **changed** from the last report, and a simple reference to that report.

The third and least preferred approach is:

- C **In even years, a full hard-copy report as in the past**, including all summary tables and programmatic chapters.

Included in each of these three alternative formats is the plan for comprehensive assessment coverage described above.

EPA will use all reports and electronic updates described above to report biennially to Congress on the status of the Nation's waters. The Report to Congress will include a new section which shows the progress made by the States, other jurisdictions, and participating Tribes toward the goal of comprehensive coverage of waters.

Beyond the national uses of the State 305(b) reports, there are many State-specific and local uses. To meet these needs and provide comprehensive programmatic information and data, EPA encourages States selecting the first or second option to prepare a full hard-copy report periodically, including complete programmatic chapters, maps, and summary tables as described in Sections 3 through 6 of these *Guidelines*.

None of the reporting formats relieve the States of any specific grant reporting requirements under related programs such as Sections 314 or 319.

The remainder of this Section of the *Guidelines* describes the requirements for full hard-copy 305(b) reports. For information about contents of the abbreviated hard-copy reports under the first or second option, see the text box in Section 1.3 of these *Guidelines* entitled "Contents of Abbreviated Hard-copy 305(b) Reports."

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

The State/EPA 305(b) Consistency Workgroup agreed on the need for periodic, electronic updates from the States on their waterbody-level assessments. In order for EPA to prepare a timely Report to Congress, States should provide electronic updates by April 1 of each year for the waters assessed in the previous calendar year. Figure 3-1 shows the schedule for hard-copy reports and electronic updates. See the text box on page 3-5 and Section 6 for details. If a State is unable to transmit an electronic update of their assessment data in a given year, the State should send a biennial electronic update by April 1 of the following year covering waters assessed in the previous two calendar years.

Sections 3 through 5 of these *Guidelines* describe the baseline of water quality information required for the Section 305(b) report; however, each State may expand on this baseline where it sees fit or as agreed upon with its EPA Region. If a State has no information on a given measure or topic, the report should clearly indicate that this is the case. Appendixes may be used to supplement the report with information considered too detailed for general reading.

Each State's assessment should be based on the most recent water quality data available. In order to produce a comprehensive portrayal of the State's water quality, the assessment should include all waters for which the State has accurate current information. States should collect and evaluate data from all available sources, including State fish and game agencies, health departments, dischargers, volunteer monitoring organizations, and Federal agencies such as the U.S. Geological Survey (USGS), the National Oceanic and Atmospheric Administration, and the U.S. Fish and Wildlife Service.

States should involve designated management agencies for nonpoint source control programs in assessments for their respective source categories and affected waterbodies. EPA further encourages States to increase the involvement of Federal agencies in conducting assessments of waters on Federal lands.

The Section 305(b) report can be used to satisfy a State's reporting requirements under Sections 106, 314, and 319 in addition to 305(b). See Table 3-1. Because the date for State submission of the 305(b) reports is the same date as submission of State Section 303(d) lists, States may want to submit their 303(d) lists with their 305(b) reports. However, since the statutory and regulatory requirements differ for the 303(d) list and the 305(b) report, States should submit each as a separate document. The 305(b) reports, the assessments under 106, 314, and 319

### **3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND**

---

if done separately from the 305(b) report, and the 303(d) lists should be compatible. If inconsistencies occur, States should explain them in a cover letter to EPA Headquarters and the Regional Office.

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

<u>Product</u>	<u>Completion Date</u>					
	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
State 305(b) reports (Full or abbreviated depending upon use of electronic updates)		T		T		T
State annual electronic updates*	pilot *	T	T	T	T	T
EPA Reports to Congress	T		T		T	

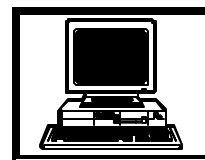
\* Electronic updates are based upon assessments completed in the previous calendar year(s).  
**States/Tribes with electronic capability are encouraged to submit a “pilot” electronic update for 1997 by December 31, 1997; subsequent updates are due by April 1 of each year.**

**Figure 3-1. Schedule for the 305(b) Cycle**

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

#### Contents of Electronic Updates



The bulk of a State's electronic update will consist of waterbody-level assessment data for assessments completed in previous calendar year. Some States have indicated they would prefer to send their updated **statewide** 305(b) assessment databases for convenience or to ensure that EPA is working with the latest, complete dataset. This is acceptable provided assessment dates are included for each waterbody. If the State is using probability-based monitoring network, include waterbody-level data for that network in the assessment database but report overall network results in the hard-copy 305(b) reports.

The transmitted data files can be EPA Waterbody System files or State-developed database files (provided EPA can convert the files to standard 305(b)/WBS codes). Note: nearly 40 States transmitted their assessment databases in electronic form during 1994-95.

Section 6 lists the data elements that States should include for each waterbody. With the exception of Biological Integrity fields, WBS and most State in-house programs already contain these data elements. EPA will modify WBS to include these and any other new fields required by these *Guidelines*.

In addition to the above, a State's electronic update will also include:

- c A coverage or map showing cumulative extent of assessment coverage statewide (i.e., progress toward comprehensive assessment of the States's waters) and either a GIS coverage showing assessment results since the last update or hard-copy maps showing assessment results
- c Metadata for the above files (database manager's name, phone number, agency, and a brief data dictionary; see "Improving meta data" below)
- c Updated ground water tables in database, spreadsheet, or word processing format

See Section 6 for more details on electronic updates.

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

Table 3-1. Reporting Requirements Satisfied by 305(b) Reports

CWA Section	Requirement
106	<p>Requires States to report on the quality of navigable waters and, to the extent practicable, ground water in 305(b) reports as a condition of receiving 106(e) grants for water quality monitoring programs.</p> <p>106 monitoring guidelines include reporting elements for ground water, wetlands, and estuaries (see Appendix K). Therefore, the 305(b) report is a convenient mechanism for reporting on programs such as:</p> <ul style="list-style-type: none"><li>⌄ The National Estuary Program (CWA Section 320)</li><li>⌄ Ground water protection programs</li><li>⌄ Wetlands programs</li></ul>
305(b)	Biennial reporting on the status of surface and ground water quality statewide; subject of these <i>Guidelines</i> .
314	State assessment of status and trends of significant publicly owned lakes including extent of point source and nonpoint source impacts due to toxics, conventional pollutants, and acidification; must report through 305(b).
319	One-time assessment of the types and extent of nonpoint source (NPS) pollution statewide; for those States that have committed to update their 319 assessments (e.g., due to grant conditions), the 305(b) report is a convenient place for such an update.

States can use the WBS to manage the waterbody-specific, quantitative information concerning surface water quality and sources of pollution. WBS can track 303(d)/total maximum daily load (TMDL) lists as well as 305(b) assessments. As in previous reporting cycles, EPA will continue to provide States with technical assistance in implementing the WBS. A *WBS Users Guide* is also available to assist users in the operation of the WBS. For more information, contact the appropriate Regional 305(b) or WBS Coordinator.

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

#### 305(b) CONTENTS — PART I: EXECUTIVE SUMMARY/OVERVIEW

Each State should provide a concise executive summary/overview. For both surface and ground water, it should

- Ⓒ Describe overall State water quality (for surface water, include a summary of the degree of designated use support for the different waterbody types)
- Ⓒ Describe the causes/stressors and sources of water quality impairments
- Ⓒ Summarize the plan showing how the State/Tribe will achieve comprehensive coverage of its waters.
- Ⓒ Discuss the programs to correct impairments
- Ⓒ Discuss the general changes or trends in water quality
- Ⓒ Briefly recap the highlights of each section of the report, particularly the State's monitoring programs, the objectives of the State water management program, issues of special concern to the State, and any State initiatives or innovations in monitoring and assessment such as expanded use of biological indicators or biocriteria or a shift to statewide basin management.

*For surface water, include a summary map or maps of designated use support and/or impairment for aquatic life, drinking water, and other uses; if this information is too detailed for a State-level map, include basin-level maps in Part III.*



---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

#### 305(b) CONTENTS — PART II: BACKGROUND

To put the report into perspective for the reader, States should provide a brief resource overview, as shown in Table 3-2. States may choose to add categories to the atlas table to reflect special areas of interest (e.g., acres of playas; acres of riparian areas outside of wetlands; miles of streams and acres of lakes on Tribal lands).

**Table 3-2. Atlas**

Topic	Value
State population	
State surface area	
Total miles of rivers and streams <sup>a</sup> <ul style="list-style-type: none"><li>- Miles of perennial rivers/streams (subset)<sup>a</sup></li><li>- Miles of intermittent (nonperennial) streams (subset)<sup>a</sup></li><li>- Miles of ditches and canals (subset)<sup>a</sup></li><li>- Border miles of shared rivers/streams (subset)<sup>a</sup></li></ul>	
Number of lakes/reservoirs/ponds <sup>a</sup>	
Number of significant publicly owned lakes/reservoirs/ponds (subset)	
Acres of lakes/reservoirs/ponds <sup>a</sup>	
Acres of significant publicly owned lakes/reservoirs/ponds (subset)	
Square miles of estuaries/harbors/bays	
Miles of ocean coast	
Miles of Great Lakes shore	
Acres of freshwater wetlands	
Acres of tidal wetlands	

<sup>a</sup>Available from EPA RF3/DLG estimates ("Total Waters" estimates)

NOTE: Impoundments should be classified according to their hydrologic behavior, either as stream channel miles under rivers or as total surface acreage under lakes/reservoirs/ponds, but **not** under both categories. In general, impoundments should be reported as lakes/reservoirs/ponds unless they are run-of-river impoundments with very short retention times.

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

#### Total Waters

The State/EPA 305(b) Consistency Workgroup has agreed that the best estimates of total State waters available nationwide are obtained using the EPA River Reach File Version 3.0 (RF3). RF3 is derived from the U.S. Geological Survey (USGS) 1:100,000 scale Digital Line Graph (DLG) data, which contain all hydrologic features found on the same scale USGS paper maps.

EPA has used RF3 to develop estimates of total waters, by State, as follows: total river miles, with breakdowns for perennial streams, intermittent streams, ditches and canals, and border rivers; total lake acres; and number of lakes. These breakdowns were produced using the USGS DLG codes to differentiate between types of hydrologic features. These estimates, which have not changed since the 1994 305(b) cycle, are available on diskette from the National 305(b) Coordinator, at (202) 260-7060.

EPA will be citing the RF3/DLG estimates of total waters (i.e., total river miles, lake acres, ocean coastal miles, and Great Lakes shore miles) in its biennial 305(b) *Reports to Congress*, and urges States to use them in their State water quality assessments. EPA, in consultation with individual States and USGS, will continue to refine these estimates where appropriate. EPA and USGS jointly plan to update the Total Waters database after completion of the National Hydrography Dataset (NHD). States using maps and measurement techniques of higher resolution than those on which the RF3/DLG estimates are based may choose to report their own estimates, with appropriate explanation in the text of their reports. In particular, due to limitations of the DLG data underlying EPA's Total Waters estimates, States may have more accurate estimates of ocean coastal miles and Great Lake shore miles.

EPA recognizes that variation in cartographic density exists among the maps used to create the DLG, and, therefore, the RF3-based total water numbers also reflect these variations. Also, RF3 is a new database and users may identify needed corrections. States and other users are urged to participate in updating and correcting RF3 in the future. RF3 data and documentation can be obtained from EPA by contacting STORET User Assistance at (800) 424-9067. Other RF3-related questions should be directed to the Monitoring Branch, EPA Office of Wetlands, Oceans, and Watersheds, at (202) 260-2488.

Until improved approaches are available to determine total estuarine and wetlands waters, States should continue to use the best available methods and should identify those methods. The U.S. Fish and Wildlife

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

Service National Wetlands Inventory is recommended for State wetland acreage estimates.

#### Maps

States should include maps and other graphical depictions of background information relevant to water quality assessments. For the 1998 cycle, the 305(b) report should include maps of basins or watersheds used in rotating basin surveys or statewide basin management, ecoregions, physiogeographic provinces, Tribal lands, and other significant characteristics of the State. EPA encourages the use of GIS coverages to prepare these maps. [Note: In Section 4, Surface Water Assessment, the *Guidelines* request maps showing degree of use support of waterbodies.]

#### Water Pollution Control Program

Each State should provide an overview of its approach to water quality management.

##### Watershed Approach

Include an overview of any watershed- or basin-oriented programs, such as the statewide basin management approach involving rotating basins used by many States and strongly supported by EPA. Describe the manner in which monitoring and point and nonpoint source control programs are implemented within this watershed approach. Also, describe how 305(b) reporting fits in with these programs, including the extent to which assessment information developed for basin management plans is compatible with or can be transferred directly to the 305(b) reporting process.

##### Water Quality Standards (WQS) Program

Provide an overview of the Standards program, including the extent to which the State establishes designated uses for their rivers, lakes, and estuarine/coastal waters consistent with the goals of the Clean Water Act. States should also explain what kinds of waters are not classified as to designated use and how they determine which waters should be classified. Last, the 305(b) report should include a brief discussion of changes in water quality standards that have occurred since the previous report, including progress toward implementing biocriteria.

EPA asks States to provide a list of the State ambient WQSs that are used to assess drinking water use attainment and to compare these WQSs to the list of National Primary Drinking Water Regulations

---

### **3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND**

---

contaminants. This information should be included as an appendix to the State 305(b) report.

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

#### Point Source Program

Within the context of both technology-based and water-quality-based controls, States should provide a **general overview** of the point source control program. They should focus on program actions, their relationship to water quality, and their effectiveness in improving water quality. In particular, State programs to assess and control the discharge of toxic pollutants should be discussed.

EPA will use information available through the Permit Compliance System (PCS) to summarize national progress. EPA encourages the States to provide additional quantitative information if they choose.

#### Nonpoint Source Control Program

Section 319 of the Clean Water Act, as amended by the Water Quality Act of 1987, required States to conduct an assessment of their nonpoint source (NPS) pollution problems and submit that assessment to EPA. In this chapter, the State is asked to update its Section 319(a) assessment report, as necessary, and discuss highlights of its nonpoint source management programs, including NPS priority watersheds. Updated waterbody-specific information on Section 319 waters should be included in the WBS or other State assessment database. In addition, if a State provides a hard-copy list of its Section 319 waters, it should do so here or in a clearly identified appendix.

Program highlights to be reported in this chapter should include both activities funded under Section 319 and nonpoint source activities funded from other Federal, State, or local sources. Highlights may include, but are not limited to, results of special nonpoint source projects, new State legislation for nonpoint source control, Section 319 ground water activities, an analysis of the change in water quality due to implementation of NPS controls, and innovative activities begun/completed since the last 305(b) reporting cycle (e.g., intergovernmental initiatives, watershed targeting, point source/nonpoint source trading).

In addition, States may refer to several other sources that will help them in reporting on nonpoint sources. The *Nonpoint Source Program and Grants Guidance for Fiscal Year 1997 and Future Years* (May 1996) describes annual reporting for the Section 319 Management Program, which is not included in the 305(b) reporting process. Also, a NPS monitoring and evaluation guide is available; see text box at end of Section 4.2 of these *Guidelines*.

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 requires each State with a federally approved coastal zone management program to develop a coastal nonpoint program to restore and protect coastal waters. States must implement management measures in conformity with guidance issued by EPA and NOAA to protect coastal waters. This guidance, *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (EPA 840-B-92-003), describes management measures that States are to achieve or implement throughout their coastal zones.

States should use their 305(b) reporting process to document water quality improvements in the Section 6217 management area. Where coastal water quality is impaired or threatened even after the implementation of management measures, then additional management measures are required. The 305(b) reporting process should be used as one of the components to the State's Coastal Nonpoint Program and the identification of threatened or impaired waters. Additional information on the Section 6217 program can be obtained from EPA's Nonpoint Source Control Branch at (202) 260-7085 or NOAA's Coastal Programs Division at (301) 713-3155.

#### **Coordination with Other Agencies**

Provide a description and/or table of program coordination with other State, Tribal, and local agencies. Mention any formal agreements such as memoranda of agreement or understanding, interagency or interstate agreements, or other agreements regarding watersheds or waterbodies. Also discuss any informal arrangements (e.g., related to monitoring or enforcement).

#### **Cost/Benefit Assessment**

Section 305 requires the States to report on the economic and social costs and benefits of actions necessary to achieve the objective of the Clean Water Act. It is recognized that this information may be difficult to obtain due to the complexities of the economic analysis involved. However, until such time as comparable procedures for evaluating costs and benefits are in wider use, States should provide as much of the following information as possible.

#### **Cost Information**

EPA asks States to provide as much of the following information as possible. Some possible sources of information are included in the text box that follows.

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

- C Capital investments in municipal facilities in the past 5 years, 10 years, and since 1972
- C Capital investments in industrial facilities in the past 5 years, 10 years, and since 1972
- C Investments in nonpoint source measures in the past 5 years, 10 years, and since 1972
- C Annual operation and maintenance costs of municipal facilities
- C Annual operation and maintenance costs of industrial facilities
- C Total annual costs of municipal and industrial facilities
- C Annual costs to States and local governments to administer water pollution control activities.

#### **Benefits Information**

The economic benefits that result from improvements in water quality are those effects that improve the economic well-being of individuals or firms. Individuals can benefit from enhanced recreation opportunities and aesthetics and from the knowledge that the aquatic ecosystem is being protected, perhaps for future generations. As a result of water quality improvements, people may visit different water sites than they used to, or they may recreate near water often. Business and industry may gain from cleaner water by having lower water treatment costs or perhaps by having lower wage costs due to the higher quality of life that their location has to offer.

Other non-recreational benefits can accrue from the role wetlands play as natural filters or sinks for certain pollutants and from their crucial role as fish nurseries. Society in general can benefit from improved habitat for endangered or threatened species.

Methods of quantifying economic benefits are described briefly in U.S. EPA (1991) and theory and methods are detailed in Freeman (1993). To facilitate comparisons between the costs and benefits of efforts to improve or protect water quality, it is desirable to measure both in dollar units. However, this is not always feasible or cost-effective. Nonetheless, it may be prudent to quantify benefits in nonmonetary terms or to provide qualitative descriptions of the water quality improvements and the associated effects of those improvements. To aid in this regard, the State

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

#### Sources of Cost Information

After issuance of these *Guidelines*, the EPA Regions will provide information to State 305(b) Coordinators from the Federal government sources cited below. Two annual Census Bureau surveys provide information on State spending on water quality which could be used to supplement information available from the States themselves. The Census Bureau conducts an Annual Survey of Government Finances and an annual Survey of Pollution Abatement Costs and Expenditures (PACE), and publishes the results of each (*Government Finances: 1990-91*, Series GF/91-5; *Current Industrial Reports*, MA 200, "PACE," through the U.S. Government Printing Office, Washington, DC). To obtain a copy of each report, telephone (301) 457-4100. Possible sources on State water quality expenditures from these documents include:

#### Capital investments and annual O&M expenditures at municipal facilities —

*Government Finances* report, Table 27: "Finances of Utilities Operated by State and Local Governments by State, Type of Utility, and Government" — This table indicates (by State) the expenditures by government utilities for water supply, and breaks down operating costs and capital costs.

*Government Finances* report, Table 29: "State and Local Government Revenue and Expenditure by Level and Type of Government, by State" — This table indicates total expenditures by State and local governments on sewerage (with capital outlay separated) and solid waste management.

*Technical and Economic Capacity of States and Public Water Systems to Implement Drinking Water Regulations — Report to Congress* (EPA 810-R-93-001, September 1993).

State sources: State water quality agencies, revolving fund program

#### Capital investments and O&M expenditures at industrial facilities —

PACE report, Table 6b: "Capital Expenditures by States for Media Water" — This table indicates (by State) total capital expenditures for water pollution abatement by manufacturing establishments, and breaks expenditures down by type of pollutant abated (hazardous vs. nonhazardous) as well as abatement technique (end of line vs. production process enhancements)

PACE report, Table 10b: "Operating Costs by States for Media Water" — This table indicates (by State) total operating costs for water pollution abatement by manufacturing establishments, and breaks down costs by type of pollutant abated (hazardous vs. nonhazardous). Nonhazardous costs are further broken down (payments to industry vs. sewage services payments to government).

For nonmanufacturing sectors (mining, petroleum and electric utilities), information is not broken down by State in the PACE report.

Nonpoint source investments — State NPS program, other State water quality agencies

Administrative Costs — State budget office.



### **3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND**

---

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

may attempt to document how people and firms are using the waters in the State. Information on recreation participation rates is useful in and of itself.

EPA is in the process of collecting data on water-based recreation activities (i.e., fishing, swimming, boating, and near-shore) using a random sample of the national population. These data will be provided to States as they are published. States may have easy access to information on participation for those activities that require licenses or entrance fees. States may also be in a position to tabulate the number of industrial units, thermoelectric facilities, and farms that divert water for productive purposes. Some localities may also have data demonstrating the importance of shoreline properties to the local tax base. Some regions may have lower average salaries for highly trained professionals that can be attributed to a higher quality of life due to abundant environmental amenities.

Such participation, water use, and quality of life information aids in documenting the importance of water resources. However, to estimate the economic benefits of water quality improvements, it must first and foremost be documented that water quality has in fact been improved or that degradation in water quality has been prevented as a result of investments in protection and enhancement. States may vary quite a bit in the type of data that they collect to verify the quality of their waters. The common requirement for an economic benefit assessment is the ability to demonstrate how the changes in water quality result in changes in how people and business enterprises use and enjoy the water resources.

States may also find well-qualified academics who are willing to answer questions related to the information needs for, and feasibility of, conducting an economic benefit assessment. The Association of Environmental and Resource Economists maintains a directory of its members, including their main fields of study. A large percentage of the membership has experience in valuation. This list can be obtained from Resources for the Future, 1616 P Street, NW, Washington, DC 20036.

States should provide the following information about benefits to the extent possible:

- C Improvements in recreational fishing
- C Improvements in commercial fishing (catch rate, etc.)

---

### **3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND**

---

- C Number of stream miles, lake acres, etc., improved from impaired to fully supporting in the past 10 years
- C Reduced cost of drinking water treatment due to cleaner intake water

---

### 3. 305(b) CONTENTS — PARTS I AND II: SUMMARY AND BACKGROUND

---

- C Increase in use of beaches attributed to improved water quality
- C Increase in recreational boating attributed to improved water quality.

States should also report case studies of water quality improvement due to point and nonpoint source controls or habitat restoration and cases of impairment prevented by controls or habitat protection. In the absence of extensive cost/benefit studies, case studies of specific waterbodies can make a compelling argument for the value of water quality management actions.

Case studies might include instances where expenditures resulted in increased water-based recreational activities, improvements in commercial or sports fisheries, recovery of damaged aquatic environments, reduced costs of water treatment undertaken at municipal and industrial facilities, or reduced medical costs due to improved water quality for recreation. States should also discuss the costs and benefits of water quality achievements for programs or specific sites documented elsewhere in the report. Examples of such projects include Clean Lakes restoration and nonpoint source control projects.

#### **Special State Concerns and Recommendations**

This section should consist of two parts. First, States should discuss special concerns that are significant issues within the State and that affect its water quality program. List and discuss any special concerns that are not specifically addressed elsewhere in this guidance, or, if they are addressed, are not identified as special State concerns. This section is a key part of the assessment, describing the forces driving specific State programs and illustrating the complex and varying nature of water quality problems throughout the country. Include, if possible, the strategies that are being planned or implemented to alleviate these problems and give site-specific examples.

Second, provide recommendations as to additional general actions that are necessary to achieve the objective of the Clean Water Act: providing for the protection and propagation of shellfish, fish, and wildlife and allowing recreation in and on the water. Examples of recommendations include developing more FDA action levels, improving training of municipal treatment facility operators, correcting combined sewer overflows, placing more emphasis on the identification and control of nonpoint sources, point source/nonpoint source trading, statewide basin management, and other watershed-based water quality management programs.